UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,561	07/29/2003	Karsten Schulz	13909-026003 / 2002P00222	4018

32864 7590 03/17/2008

FISH & RICHARDSON, P.C.
PO BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
MANSFIELD, THOMAS L	

ART UNIT	PAPER NUMBER
3623	

MAIL DATE	DELIVERY MODE
03/17/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/628,561	SCHULZ ET AL.	
	Examiner	Art Unit	
	THOMAS MANSFIELD	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *18 July 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. This First Office action is in reply to the Application filed on 29 July 2003.

2. Claims 1-36 are currently pending and have been examined.

Claim Objections

3. Claims 32-36 are objected to because of the following informalities: Claims 32-36 recite *method* claims when they should recite *apparatus* claims. Appropriate correction is required. For examination purposes, the Examiner will interpret these claims as *apparatus* claims.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the designation action of the joining task for a fourth task. Claim 12 recites, *"…a joining task which designates that a fourth task within the second workflow,…"*. However, there is no further explanation as to how the joining task is being designated. For examination purposes, the Examiner will omit the word, "*that*", such that the claim recites, *"…a joining task which designates a fourth task within the second workflow,…"*. Clarification is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-14 and 23-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Du et al (Du) (U.S. 6,041,306).

With regard to Claims 1 and 23, Du teaches *a method and apparatus of building a combined workflow* (a workflow process management (WFPM) system 10 implemented in a network 11 of computer systems, being accomplished by computer software) (see at least column 4, lines 9-33) *comprising:*

- Accepting a first workflow (each workflow process **18**) comprising a first plurality of tasks (sequence of activities or action) and associated with a first party (an associated user14a-b) (see at least column 4, lines 34-40).
- Accepting a second workflow (each workflow process **18**) comprising a second plurality of tasks (sequence of activities or action) and associated with a second party (an associated user14a-b) (see at least column 4, lines 34-40).
- Ordering the first plurality of tasks and the second plurality of tasks into a combined workflow (work nodes) (see at least column 6, lines 38-64) having a task order that, when executed, provides a desired result of a business collaboration between the first party and the second party (with multiple activities potentially performed in parallel) (see at least column 4, lines 45-48).

- Adding ordering tasks (work nodes) operable to implement the order of the combined workflow and thereby achieve the desired result (see at least column 6, lines 38-64).

With regard to Claims 2 and 24, Du teaches *wherein adding ordering tasks comprises forming a sequential flow which interleaves implementation* (rule nodes) *of the first plurality of tasks and the second plurality of tasks* (workflow process **18**) (see at least column 6, line 38 through column 7, lines 1-24).

With regard to Claims 3 and 25, Du teaches *wherein adding ordering tasks comprises forming a parallel flow of a first task within the first plurality of tasks and a second task within the second plurality of tasks* (with multiple activities potentially performed in parallel) (see at least column 4, lines 45-56).

With regard to Claims 4 and 26, Du teaches *wherein adding ordering tasks comprises adding at least one of conjunctive* (Forward arcs) *splitting and joining tasks which specify the task order* (see at least column 6, lines 21-33).

With regard to Claims 5 and 27, Du teaches *wherein adding ordering tasks comprises adding at least one of alternative* (reset arcs) *splitting and joining tasks which specify the task order* (see at least column 6, line 21 through column 7, lines 1-24).

With regard to Claim 6, Du teaches *wherein adding ordering tasks comprises adding a first splitting task* (Initial **160**) *which designates that a first task within the first workflow is followed by a first following task* (Active **163**) *and a second following task* (Completed **178**, Compensation **171**) (see at least column 13, lines 19-29 and FIG. 9).

With regard to Claim 7, Du teaches wherein adding ordering tasks comprises adding the first following task as a second task within the second workflow (see at least column 13, lines 19-29 and FIG. 9).

With regard to Claim 8, Du teaches wherein adding ordering tasks comprises adding the first following task as a first joining task (Active state **163**), the first joining task designating a second task within the second workflow as following the first joining task and the first splitting task (Active state **163** or Compensation state **171**) (see at least column 13, lines 19-29 and FIG. 9).

With regard to Claim 9, Du teaches wherein adding ordering tasks comprises adding a second splitting task (Active **163**) following the second task within the second workflow, the second splitting task designating that the second task is followed by a third following task (Compensation **171**) and a fourth following task (Completed **178**, Suspended Compensation **175**) (see at least column 13, lines 19-63 and FIG. 9).

With regard to Claim 10, Du teaches wherein adding ordering tasks comprises adding the third following task as the second following task, the second following task being a second joining task within the first workflow that designates that a third task within the first workflow follows the second following task (suspended compensation states) (see at least column 13, lines 19-63 and FIG. 9).

With regard to Claim 11, Du teaches wherein adding ordering tasks comprises adding the fourth following task (Suspended Compensation **175**) as a third joining task within the second workflow, the third joining task designating that a fourth task (Completed **178**) within the second workflow follows the third joining task and the third task within the first workflow (see at least column 13, lines 19-63 and FIG. 9).

With regard to Claim 12, Du teaches wherein a second ordering task is a joining task which designates a fourth task (Suspended Compensation **175**) within the second workflow, the fourth task following the second task within the combined workflow (see at least column 13, lines 19-63 and FIG. 9).

With regard to Claim 13, Du teaches:

- adding a third task (Suspended Active **168**) within the first workflow as the second following task (see at least column 13, lines 19-63 and FIG. 9).
- adding a second joining task within the first workflow as the third following task (Compensation **171**), the second joining task designating that a fourth task within the first workflow follows the third following task (Active **163**, Completed **178**) (see at least column 13, lines 19-63 and FIG. 9).

With regard to Claims 14 and 28, Du teaches wherein ordering the first plurality of tasks comprises inputting the task order from an operator (workflow process designer 22a-c) (see at least column 5, line 48).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 15-22 and 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Du as applied to claims 1-14 and 23-28 above, and further in view of Wil M.P. van der Aalst (Aalst), "Process-Oriented Architectures for Electronic Commerce and Interorganizational Workflow", Information Systems Vol. 24, No. 8, pp. 639-671, 1999.

With regard to Claims 15 and 29, Du teaches the method and apparatus above. Du does not specifically teach *representing the first workflow as a first matrix in which the first plurality of tasks are each represented as first vertices, where values of the first vertices within the first matrix are determined by first dependencies between the first plurality of tasks and representing the second workflow as a second matrix wherein each of the second plurality of tasks are represented as second vertices, where values of the second vertices within the second matrix are determined by second dependencies between the second plurality of tasks*. Aalst teaches process-oriented architectures for *representing the first workflow* (workflow) *as a first matrix* (tuple) *in which the first plurality of tasks* (tasks, T) *are each represented as first vertices, where values of the first vertices within the first matrix are determined by first dependencies between the first plurality of tasks* ($b \in B$, task_map(b)) *and representing the second workflow* (workflow) as a second matrix (tuple) wherein each of the second plurality of tasks (tasks,T) are represented as second vertices, where values of the second vertices within the second matrix are determined by second dependencies between the second plurality of tasks($b \in B$, task_map(b)) in analogous art

of global transaction support for workflow management systems for the purposes of, "…the business partners involved in the interorganizational workflow share a common description of the workflow process definition" (see at least pages 649-650, under heading 5.1. Definition of CT-IOWF).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the process-oriented architectures for electronic commerce and interorganizational workflow as taught by Aalst in the distributed workflow management system as disclosed by Du. One of ordinary skill in the art would have been motivated to do so for the benefit of load balancing or proactive reconfiguration of interorganizational workflow share (Aalst, pages 649-650, 5.1. Definition of CT-IOWF).

With regard to Claims 16 and 30, Du does not specifically teach *inserting the first matrix and the second matrix into a third matrix; modifying a selected value within the third matrix, thereby reflecting a construction or removal of a selected dependency between two vertices within the first plurality of tasks, consistent with the task order; adding a fourth vertex before a first of the two vertices, the fourth vertex having a first chosen value reflecting a first new dependency between the fourth vertex and the first of the two vertices; and adding a fifth vertex after the first of the two vertices, the fifth vertex having a second chosen value reflecting a second new dependency between the fifth vertex and the first of the two vertices*. Aalst teaches inserting the first matrix and the second matrix into a third matrix (tuple CL-IOWF = (B, WFsub1, WFsub2, …WFsubn, PsubM, send receive); modifying a selected value within the third matrix (m), thereby reflecting a construction or removal of a selected dependency between two vertices within the first plurality of tasks, consistent with the task order; adding a fourth vertex before a first of the two vertices, the fourth vertex having a first chosen value reflecting a first new dependency between the fourth vertex and the first of the two vertices; and adding a fifth vertex after the first of the two vertices, the fifth vertex having a second chosen value reflecting a second new dependency between the fifth vertex and the first of the two vertices (m $\in$ PsubM: send (m) (see

at least pages 659-666) in analogous art of global transaction support for workflow management systems for the purposes of, "…a loosely coupled architecture (LCA)" (see at least pages 659-666, under heading, 6. LOOSELY COUPLED).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the process-oriented architectures for electronic commerce and interorganizational workflow as taught by Aalst in the distributed workflow management system as disclosed by Du. One of ordinary skill in the art would have been motivated to do so for the benefit of asynchronous partitioned workflows (Aalst, pages 659-666, under heading, 6. LOOSELY COUPLED).

With regard to Claims 17 and 31, Du does not specifically teach *wherein the first workflow is an abstracted workflow associated with a first actual workflow of the first party, and further wherein a confidential nature of the first actual workflow is protected by use of the abstracted workflow in constructing the combined workflow*. Aalst teaches *wherein the first workflow is an abstracted workflow associated with a first actual workflow of the first party, and further wherein a confidential nature of the first actual workflow is protected by use of the abstracted workflow in constructing the combined workflow* in analogous art of global transaction support for workflow management systems for the purposes of, "…projection inheritance conforms to hiding or abstracting from tasks new in x) (see page 655, third paragraph).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the process-oriented architectures for electronic commerce and interorganizational workflow as taught by Aalst in the distributed workflow management system as disclosed by Du. One of ordinary skill in the art would have been motivated to do so for the benefit of increased security or privacy between collaborative workflows (Aalst, page 655, third paragraph)

With regard to Claims 18 and 32, Du does not specifically teach *selecting a subset of the combined workflow for execution by the first party*. Aalst teaches *selecting a subset of the combined workflow for execution by the first party* in analogous art of global transaction support for workflow management systems for the purposes of, "The common workflow can be seen as a superclass and the local workflows can be seen as subclasses of this superclass" (see page 655, second paragraph).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the process-oriented architectures for electronic commerce and interorganizational workflow as taught by Aalst in the distributed workflow management system as disclosed by Du. One of ordinary skill in the art would have been motivated to do so for the benefit that inheritance notions could be useful (Aalst, page 655, second paragraph).

With regard to Claims 19 and 33, Du does not specifically teach *determining that the subset includes a third plurality of tasks, each consecutive pair of the third plurality of tasks connected by a dependency*. Aalst teaches *determining that the subset includes a third plurality of tasks, each consecutive pair of the third plurality of tasks connected by a dependency* in analogous art of global transaction support for workflow management systems for the purposes of, "…x can do what y can do with respect to the tasks present in y" (see page 655, third paragraph).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the process-oriented architectures for electronic commerce and interorganizational workflow as taught by Aalst in the distributed workflow management system as disclosed by Du. One of ordinary skill in the art would have been motivated to do so for the benefit that inheritance solves the problems encountered during adaptive workflows in a collaborative process (Aalst, page 655, first paragraph).

With regard to Claims 20 and 34, Du does not specifically teach *wherein selecting a subset comprises determining that a last task within the third plurality of tasks precedes at most one subsequent task within the combined workflow*. Aalst teaches *determining that a last task within the third plurality of tasks precedes at most one subsequent task within the combined workflow* in analogous art of global transaction support for workflow management systems for the purposes of, "…x can do what y can do with respect to the tasks present in y" (see page 655, third paragraph).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the process-oriented architectures for electronic commerce and interorganizational workflow as taught by Aalst in the distributed workflow management system as disclosed by Du. One of ordinary skill in the art would have been motivated to do so for the benefit of controlled task dependency during adaptive workflows in a collaborative process (Aalst, page 655, third paragraph).

With regard to Claims 21 and 35, Du does not specifically teach *determining that no internal task within the third plurality of tasks, exclusive of the last task, immediately precedes an external task that is not included within the third plurality of tasks*. Aalst teaches *determining that no internal task within the third plurality of tasks, exclusive of the last task, immediately precedes an external task that is not included within the third plurality of tasks* in analogous art of global transaction support for workflow management systems for the purposes of, "A trigger is an external condition which leads to the execution of an enabled task" (see at least page 653, first paragraph).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the process-oriented architectures for electronic commerce and interorganizational workflow as taught by Aalst in the distributed workflow management system as disclosed by Du. One of ordinary skill in the art would have been motivated to do so for the benefit of a control feature during adaptive workflows in a collaborative process (Aalst, page 655, first paragraph).

With respect to Claims 22 and 36, Du does not specifically teach *determining that no internal task within the third plurality of tasks, exclusive of a first task of the third plurality of tasks, immediately succeeds an external task that is not included within the third plurality of tasks*. Aalst teaches *determining that no internal task within the third plurality of tasks, exclusive of a first task of the third plurality of tasks, immediately succeeds an external task that is not included within the third plurality of tasks* in analogous art of global transaction support for workflow management systems for the purposes of, “For distinguishing x and y under protocol inheritance all tasks present in x but not in y are blocked. The new tasks are simply disallowed to be executed" (see at least page 655, third paragraph).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the process-oriented architectures for electronic commerce and interorganizational workflow as taught by Aalst in the distributed workflow management system as disclosed by Du. One of ordinary skill in the art would have been motivated to do so for the benefit of hiding or abstracting from new tasks in the external task (Aalst, page 655, third paragraph).

Conclusion

10. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Notani et al (U.S. 7,039,597) discloses a method and system for managing collaboration within and between enterprises.
- Leymann et al (U.S. 6,415,297) discloses a parallel database support for workflow management systems.
- Flores et al (U.S. 5,630,069) discloses a method and apparatus for creating workflow maps of business processes.
- Parsonnet et al (U.S. 7,184,966) discloses systems and methods for remote role-based collaborative work environment.
- Kang et al, "Access Control Mechanisms for Inter-Organizational Workflow", SACMAT'01, May 3-4, 2001, Chantilly, Virginia ACM 1-58113-350-2/01/0005, discloses access control requirements for inter-organizational workflows.
- Grefen et al, "Global transaction support for workflow management systems: form formal specification to practical implementation", The VLDB Journal 10: 316-333 (2001), discloses a formal specification of the transaction model and transaction management algorithms in set and graph theory.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS MANSFIELD whose telephone number is (571)270-1904. The examiner can normally be reached on Monday-Thursday 8:30 am-6 pm, alt. Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 571-272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. M./
Examiner, Art Unit 3623

5 March 2008
Thomas Mansfield

/Beth Van Doren/
Primary Examiner, Art Unit 3623